

### ***What Is Claimed Is:***

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 963 in SEQ ID NO:2 (Figures 1A-E);
- (b) a nucleotide sequence encoding a polypeptide comprising amino acids from about 2 to about 963 in SEQ ID NO:2;
- (c) a nucleotide sequence encoding a polypeptide comprising amino acids from about 48 to about 963 in SEQ ID NO:2;
- (d) a nucleotide sequence encoding the mature TR16 polypeptide having the amino acid sequence encoded by cDNA HTWBD48 clone contained in ATCC Deposit No. PTA-506;
- (e) a nucleotide sequence encoding the mature TR16 polypeptide having the amino acid sequence encoded by cDNA clone HLICS62 contained in ATCC Deposit No. PTA-506;
- (f) a nucleotide sequence encoding the TR16 extracellular domain;
- (g) a nucleotide sequence encoding the TR16 transmembrane domain;
- (h) a nucleotide sequence encoding the TR16 intracellular domain;
- (i) a nucleotide sequence encoding the TR16 receptor extracellular and intracellular domains with all or part of the transmembrane domain deleted;
- (j) a nucleotide sequence encoding the TR16 cysteine-rich domain;
- (k) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 1027 in Figures 4A-E (SEQ ID NO:4);
- (l) a nucleotide sequence encoding a polypeptide comprising amino acids from about 2 to about 1027 in Figures 4A-E (SEQ ID NO:4);
- (m) a nucleotide sequence encoding a polypeptide comprising amino acids from about 48 to about 1027 in Figures 4A-E (SEQ ID NO:4); and
- (n) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), or (m).

2. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence of nucleotides 1 to 2889 in Figures 1A-E.

3. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence of nucleotides 1 to 3081 in Figures 4A-E (SEQ ID NO:4).

4. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence in Figures 1A-E encoding the mature TR16 receptor having the amino acid sequence in Figures 1A-E, or the nucleotide sequence in Figures 4A-E (SEQ ID NO:4) encoding the mature TR16 receptor having the amino acid sequence in Figures 4A-E (SEQ ID NO:4).

5. The nucleic acid molecule of claim 1, wherein said polynucleotide has the complete nucleotide sequence of a cDNA clone contained in ATCC Deposit No. PTA-506.

6. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence encoding the TR16 receptor having the amino acid sequence encoded by a cDNA clone contained in ATCC Deposit No. PTA-506.

7. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence encoding the mature TR16 receptor having the amino acid sequence encoded by a cDNA clone contained in ATCC Deposit No. PTA-506.

8. An isolated nucleic acid molecule comprising a polynucleotide which hybridizes under stringent hybridization conditions to a polynucleotide having a nucleotide sequence identical to a nucleotide sequence in (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), or (n) of claim 1, wherein said polynucleotide which hybridizes does not hybridize under stringent hybridization conditions to a polynucleotide having a nucleotide sequence consisting of only A residues or of only T residues.

9. An isolated nucleic acid molecule comprising a polynucleotide which encodes

the amino acid sequence of an epitope-bearing portion of a TR16 receptor having an amino acid sequence in (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), or (m) of claim 1.

10. The isolated nucleic acid molecule of claim 9, which encodes an epitope-bearing portion of a TR16 receptor selected from the group consisting of: a polypeptide comprising amino acid residues from about 51 to about 67 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 72 to about 79 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 94 to about 104 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 159 to about 171 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 180 to about 185 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 222 to about 223 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 238 to about 242 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 313 to about 319 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 325 to about 346 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 355 to about 362 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 385 to about 395 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 416 to about 430 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 456 to about 465 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 479 to about 483 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 530 to about 535 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 543 to about 548 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 569 to about 579 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 608 to about 613 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 627 to about 639 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 658 to about 665 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 702 to about 707 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 719 to about 723 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 749 to about 747 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 763 to about 767 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 837 to about 842 in SEQ ID NO:2; a polypeptide comprising amino acid residues from

about 849 to about 856 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 886 to about 893 in SEQ ID NO:2; and a polypeptide comprising amino acid residues from about 950 to about 955 in SEQ ID NO:2 .

11. The isolated nucleic acid molecule of claim 1, which encodes the TR16 receptor extracellular domain.

12. The isolated nucleic acid molecule of claim 1, which encodes the TR16 receptor transmembrane domain.

13. The isolated nucleic acid molecule of claim 1, which encodes the TR16 receptor intracellular domain.

14. A method for making a recombinant vector comprising inserting an isolated nucleic acid molecule of claim 1 into a vector.

15. A recombinant vector produced by the method of claim 14.

16. A method of making a recombinant host cell comprising introducing the recombinant vector of claim 15 into a host cell.

17. A recombinant host cell produced by the method of claim 16.

18. A recombinant method for producing a TR16 polypeptide, comprising culturing the recombinant host cell of claim 17 under conditions such that said polypeptide is expressed, and recovering said polypeptide.

19. An isolated nucleic acid molecule comprising a polynucleotide having a sequence at least 95% identical to a sequence selected from the group consisting of:

- (a) the nucleotide sequence of clone HTWBD48;
- (b) the nucleotide sequence of clone HLICS62; and
- (c) a nucleotide sequence complementary to any of the nucleotide

sequences in (a), or (b), above.

20. An isolated TR16 polypeptide having an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:

- (a) amino acids from about 1 to about 963 in SEQ ID NO:2;
- (b) amino acids from about 2 to about 963 in SEQ ID NO:2;
- (c) amino acids from about 48 to about 963 in SEQ ID NO:2;
- (d) the amino acid sequence of the mature TR16 polypeptide having the amino acid sequence encoded by cDNA clone HLICS62 contained in ATCC Deposit No. PTA-506;
- (e) the amino acid sequence of the mature TR16 polypeptide having the amino acid sequence encoded by cDNA clone HTWBD48 contained in ATCC Deposit No. PTA-506;
- (f) the amino acid sequence of the TR16 receptor extracellular domain;
- (g) the amino acid sequence of the TR16 receptor transmembrane domain;
- (h) the amino acid sequence of the TR16 receptor intracellular domain;
- (i) the amino acid sequence of the TR16 receptor intracellular and extracellular domains with all or part of the transmembrane domain deleted;
- (j) the amino acid sequence of the TR16 cysteine-rich domain;
- (k) amino acids from about 1 to about 1027 in SEQ ID NO:4;
- (l) amino acids from about 2 to about 1027 in SEQ ID NO:4;
- (m) amino acids from about 48 to about 1027 in SEQ ID NO:4; and
- (n) the amino acid sequence of an epitope-bearing portion of any one of the polypeptides of (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), or (m).

21. An isolated antibody that binds specifically to a TR16 receptor polypeptide of claim 20.

22. A method of treating diseases and disorders associated with the inhibition of apoptosis comprising administering an effective amount of the polypeptide as claimed in claim 20, or an agonist thereof to a patient in need thereof.

23. A method of treating diseases and disorders associated with increased apoptosis comprising administering to a patient in need thereof an effective amount of an antagonist of the polypeptide as claimed in claim 20 to a patient in need thereof.

24. A method of treating inflammatory diseases and disorders comprising administering to a patient in need thereof an effective amount of an antagonist of the polypeptide as claimed in claim 20.

25. An isolated peptide that binds specifically to a TR16 receptor polypeptide of claim 20.

26. An isolated polypeptide comprising an epitope-bearing portion of the TR16 receptor protein, wherein said portion is selected from the group consisting of: a polypeptide comprising amino acid residues from about 51 to about 67 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 72 to about 79 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 94 to about 104 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 159 to about 171 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 180 to about 185 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 222 to about 223 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 238 to about 242 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 313 to about 319 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 325 to about 346 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 355 to about 362 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 385 to about 395 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 416 to about 430 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 456 to about 465 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 479 to about 483 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 530 to about 535 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 543 to about 548 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 569 to about 579 in SEQ ID NO:2; a

polypeptide comprising amino acid residues from about 608 to about 613 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 627 to about 639 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 658 to about 665 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 702 to about 707 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 719 to about 723 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 749 to about 747 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 763 to about 767 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 837 to about 842 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 849 to about 856 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 886 to about 893 in SEQ ID NO:2; and a polypeptide comprising amino acid residues from about 950 to about 955 in SEQ ID NO:2.

27. An isolated nucleic acid molecule comprising a polynucleotide encoding a TR16 receptor polypeptide wherein, except for at least one conservative amino acid substitution, said polypeptide has a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 963 in SEQ ID NO:2;
- (b) a nucleotide sequence encoding a polypeptide comprising amino acids from about 2 to about 963 in SEQ ID NO:2;
- (c) a nucleotide sequence encoding a polypeptide comprising amino acids from about 48 to about 963 in SEQ ID NO:2;
- (d) a nucleotide sequence encoding the mature TR16 polypeptide having the amino acid sequence encoded by cDNA clone HTWBD48 contained in ATCC Deposit No. PTA-506;
- (e) a nucleotide sequence encoding the mature TR16 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. PTA-506;
- (f) a nucleotide sequence encoding the TR16 extracellular domain;
- (g) a nucleotide sequence encoding the TR16 transmembrane domain;
- (h) a nucleotide sequence encoding the TR16 intracellular domain;
- (i) a nucleotide sequence encoding the TR16 receptor extracellular and

intracellular domains with all or part of the transmembrane domain deleted;

- (j) a nucleotide sequence encoding the TR16 cysteine-rich domain;
- (k) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 1027 in SEQ ID NO:4;
- (l) a nucleotide sequence encoding a polypeptide comprising amino acids from about 2 to about 1027 in SEQ ID NO:4;
- (m) a nucleotide sequence encoding a polypeptide comprising amino acids from about 48 to about 1027 in SEQ ID NO:4; and
- (n) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), or (m).

28. An isolated TR16 receptor polypeptide wherein, except for at least one conservative amino acid substitution, said polypeptide has a sequence selected from the group consisting of:

- (a) amino acids from about 1 to about 963 in SEQ ID NO:2;
- (b) amino acids from about 2 to about 963 in SEQ ID NO:2;
- (c) amino acids from about 48 to about 963 in SEQ ID NO:2;
- (d) the amino acid sequence of the mature TR16 polypeptide having the amino acid sequence encoded by a cDNA clone HTWBD48 contained in ATCC Deposit No. PTA-506;
- (e) the amino acid sequence of the mature TR16 polypeptide having the amino acid sequence encoded by a cDNA clone HLICS62 contained in ATCC Deposit No. PTA-506;
- (f) the amino acid sequence of the TR16 receptor extracellular domain;
- (g) the amino acid sequence of the TR16 receptor transmembrane domain;
- (h) the amino acid sequence of the TR16 receptor intracellular domain;
- (i) the amino acid sequence of the TR16 receptor extracellular and intracellular domains with all or part of the transmembrane domain deleted;
- (j) the amino acid sequence of the TR16 cysteine-rich domain;
- (k) amino acids from about 1 to about 1027 in SEQ ID NO:4;
- (l) amino acids from about 2 to about 1027 in SEQ ID NO:4;



- (m) amino acids from about 48 to about 1027 in SEQ ID NO:4; and
- (n) the amino acid sequence of an epitope-bearing portion of any one of the polypeptides of (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), or (m).